

**ABSTRACT**

A method for retrieving and modifying data elements on a shared medium following request from multiple client computers, such that data retrieval transactions on a data element, originating from one or more clients, are not compromised by data update transactions on the same data element originating from other clients. The shared medium controller receives from multiple clients transaction requests for reading or writing a data element stored on the shared medium. The transactions requests are added to an execution queue in order. All read transaction requests are then retrieved and executed in parallel, up to a write transaction request on the data element. The write transaction request is then executed while all incoming read transaction requests for the same data element are queued until the write transaction request is completed.